REMARKS

Claims 1, 3-6 and 8-17 are pending and stand rejected.

Claims 7, 8, 9, 12, 13. and 17 have been cancelled.

Claim 1 has been amended to include limitations of original claim 1, claim 8 (now cancelled) and claim 16. The amendment of claims 1, 16 and 17 to a 77.1% TWLT is supported by original disclosure in Example 4, as found on page 28.

Claims 10, 14, and 15 have been amended to change the dependency to non-cancelled claims.

Summary of Invention:

Applicant's invention relates to polymeric articles having a textured surface and a frosted appearance. To have a frosted appearance, the minimum opacity number should be about 10%. The loading of the beads and mismatch of refractive index between the beads and matrix material affects the hiding power. (page 14, lines 1-6). The composition is useful for lighting, signs. shower doors and office doors where privacy is preserved without sacrificing loss of light. The refractive index difference between the particles and the matrix is such that light is slightly diffused to produce a frosted appearance, but not bent enough to produce an opaque appearance.

35 U.S.C. §103(a)

Claims 1, 3-6, and 8-17 stand rejected under U.S.C. §103(a) as being unpatentable over Hennig, et al., US Patent Number 4,876,311. The Examiner has considered Applicant's Declaration in which Applicant repeated the experiment of the Hennig reference, as requested by the Examiner. The Examiner acknowledged that the composition of the particles discussed in the declaration appear to be the same as that of the Hennig reference, there was not enough detail on how the particles were made. Additionally, the particles in the declaration have a particle size of 48-50 microns, while the particles of the Hennig reference have particle sizes of about 37 microns.

Applicant has amended the claims to cite that the highly crosslinked polymer particles are composed of 15 - 35% by weight styrene; 65 - 85% by weight alkyl

methacrylate or alkyl acrylate or a combination thereof; and 0.1 - 2.5% by weight crosslinking agent. The key to achieving the properties claimed by Applicant is in large part related to the chemical compositions of the beads and matrix. Specifically, the difference in the refractive index of the particles relative to the matrix material determines the extent to which light will be diffused at the interface between the particles and matrix. Applicant has found that a refractive index difference between the particles and matrix is preferably greater than 0.2 for the frosted appearance. However, if the refractive index difference is too great, light will be diffused and scattered too much, resulting in an opaque material. In the comparative experiment, added by the previous Declaration, it can be seen that the compositions exemplified in the Hennig reference, having a high level of styrene (40 %) in the beads, producing poor Total White Light Transmission (TWLT) of 22 and 24%. These materials are opaque and unsatisfactory for the applications for which Applicant's invention is intended.

Polystyrene has a refractive index of about 1.59. Polymethylmethacrylate has a refractive index of about 1.49. The refractive index of the polymeric beads will be a mathematical average based on the amount of each monomer. The Hennig reference cites a styrene level of from 9.9 - 59.9%. This range produces beads having a refractive index of from 1.5 to 1.55. This is a very large range, compared to a polymethylmethacrylate matrix, resulting in and almost clear composite to a very opaque composite. There is no teaching or suggestion in Hennig within this broad range, to adjust the composition to produce a frosted appearance.

Applicant's have amended the claims to cite a level of 15 – 35 % styrene in the polymeric particles. Applicant has found that only at these lower levels of styrene, will the refractive index difference between the beads and the matrix be such that a frosted appearance is achieved.

The Hennig reference fails to teach or suggest all of Applicant's claim limitations, as amended, and therefore fails to present a *prima facie* case of obviousness under 35 U.S.C. §103. Specifically the Hennig reference fails to teach or suggest polymer matrices having a Total White Light Transmission (TWLT) of greater than 78.9%, nor the composition of beads for obtaining such polymer matrices. Further, the Hennig reference is directed to a different application, requiring different polymer properties

from Applicant's application, and the Hennig reference teaches away from Applicant's claims.

The Hennig reference fails to teach or suggest a polymer bead-modified matrix having a TWLT of greater than 78.9%. This is not surprising, since the Hennig reference is directed to articles made of opaque synthetic resins suitable for light projection screens. An article having a TWLT of greater than 78.9% would let far too much white light through the article, and would not be suitable for use as a light projection screen. "The proposed modification cannot render the prior art unsatisfactory for its intended use" (MPEP 2143.01). The limitations of a TWLT of greater than 78.9% in Applicant's claims would make the Hennig reference unsatisfactory for use as a light projection screen. One of skill in the art would not be motivated by a teaching of a polymer composite for an opaque light projection screen to arrive at the high TWLT claimed by Applicant. Therefore the Hennig reference fails to present a *prima facie* case of obviousness under 35 U.S.C.§103.

Further the Hennig reference teaches away from Applicant's amended claims by exemplifying a composition providing a TWLT of only 22-24% - far below the claimed 78.9% minimum.

In view of the above, Applicant believes that the reasons for rejection have been overcome, and the claims, as amended herein, should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,

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